SelfSufficientLiving Cell

To design and construct the so-called "nearly zero energy buildings" adequate new skills and closer cooperation of experts of various disciplines are needed. IDES-EDU project is a project of the Intelligent Energy Europe program, which aims to develop the curriculum and teaching materials for the Master degree program in the field of construction of such buildings. 15 European universities are involved in the IDES-EDU project, among them Laboratory for Sustainable Technologies in Buildings from the Faculty of Mechanical Engineering, University of Ljubljana. One of the activities of the project was designing and manufacturing energy efficient residential buildings.

Students from the Faculty of Mechanical Engineering, the Faculty of Architecture and the Faculty of Health Sciences from University of Ljubljana participated in the project called "SelfSufficientLiving Cell".

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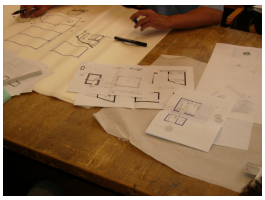
IDES-EDU

How it started ?

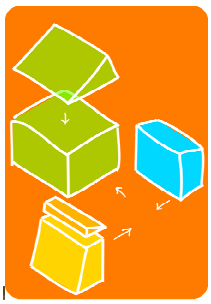
Project began in October 2010. Students of the Faculty of Architecture form a team and within the lectures Building physics and Building services lead by professor Sašo Medved participating in the project. Cell architectural design was made within the seminar led by architect assistant Igor Seljak.

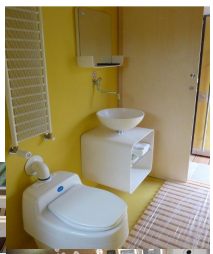


Energy efficiency measures and technology systems design were done by students of architecture and mechanical engineering during curriculum Renewable energy sources. In meantime, ERASMUS students from 8 countries plan virtual "Self- sufficientliving Cell". During design IDES EDU education materials were used and tested.

How it works ?

The Cell is heated by three different solar water and air heating systems, while for the power supply photovoltaic system is used. A system for collecting rain water is installed, waste water is treated in a constructed wetland. That's why the Cell is not connected to any municipal district system. All five units have been designed in collaboration with more than twenty industrial partners, on the polygon in the Middle Gameljne near Ljubljana. At the end of May 2012 all units were transported to a location in the park at Trnovo near Finžgarjeva Street in Ljubljana and available for the visitors since than.





How it was built ?

The ultimate goal was self sufficiency and mobility of the Cell. Therefore it consists of five modules, each with its own uniqe role: residential unit, bedroom in the attic, sanitary unit with shower and toilet, technology unit with kitchen, solar heating and photovoltaic systems and rainwater collection and supply system and the attic of the technological unit with a hot air solar heating system. All units are made by timber frames. Several insulation materials were used such as mineral wool, cellulose and vacuum panels. Students were involved in all building phases, including workshops organized by industrial partners.

What's going on now?

Since the opening in May 2012, project was presented in several articles and TV shows and at international and domestic conferences. Even more important is that Cell attracts very different visitors: from general public to experts, from primary school pupils to professional scholars and university students, from Slovenia and abroad.

Where can you find more data ?

Informations about planing principles, building process and installed technologies are available on site **www.ee.fs.uni-lj.si/cell**